



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/408,742	09/30/1999	ALBERT VARELIAN	99-CN-118	4407

7590 10/22/2004

LISA K JORGENSEN ESQ  
STMICROELECTRONICS INC  
1310 ELECTRONICS DRIVE  
MS 2346  
CARROLLTON, TX 75006

EXAMINER

TIEU, BINH KIEN

ART UNIT PAPER NUMBER

2643

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/408,742

Applicant(s)

VARELJIAN, ALBERT

Examiner

BINH K. TIEU

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32-61 is/are allowed.
- 6) ☒ Claim(s) 1-4, 16-19, 22, 25, 27, 28 and 31 is/are rejected.
- 7) ☒ Claim(s) 5-15, 20, 21, 23, 24, 26, 29 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see Applicants' remarks, filed 08/16/2004, with respect to the rejection(s) of claims 1-4, 16-19, 22, 25, 27-28 and 31 under 35 U.S.C. 103(a) as being unpatentable over Rahamin in view of Hiyoshi, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Isaksson et al. (U.S. Pat. #: 6,538,986).
2. Applicant's arguments with respect to rejected claims 1-4, 16-19, 22, 25, 27-28 and 31 have been considered but are moot in view of the new ground(s) of rejection as following.
3. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2643

5. Claims 1, 16 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rahamim (U.S. Pat. #: 5,541,990 as cited in the previous Office Action) in view of Isaksson et al. (U.S. Pat. #: 6,538,986).

**Regarding claim 1**, Rahamim teaches a device (i.e., a device as shown in figure 3) for transmitting and receiving signals over a communication line, comprising:

a transmitter circuit having an output coupled to the communication line (i.e., output transmit lines Tx1 and Tx2);

a receiver circuit having an input coupled to the communication line (i.e., input receive line Rxin; col.4, lines 17-32); and

a hybrid circuit (i.e., hybrid circuit 300) connected to the transmitter output, the receiver input and the communication line, the hybrid circuit being configured as a voltage divider (i.e., voltage divider circuit) formed from reactive elements (i.e., a combination of Rr and a feedback resistor Rf; col.5, lines 34-40) for substantially canceling signals (i.e., reflected echo) transmitted by the transmitter circuit from appearing at the receiver input (col.4, lines 37-54; col.5, lines 26-32 and col.6, lines 4-30).

It should be noticed that Rahamim fails to clearly teach the feature of hybrid circuit for filtering signals received from the communications lines at frequencies that fall outside of a predetermined frequency range. However, Isaksson et al. ("Isaksson") teaches a Splitter/Hybrid coupled to subscriber twisted telecommunication line having low-pass (LP) filters for receiving and transmitting signals from and to the subscriber twisted telecommunication line such that the "LINE" as shown in figure 5 and 8, col.11, lines 11-43 for a purpose of eliminating undesired signals received from a telephone line.

Art Unit: 2643

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of hybrid circuit with filtering feature for filtering signals received from the communications lines at frequencies fall outside of a predetermined frequency range such as voice frequencies range, as taught by Hiyoshi, into view of Rahamim in order to improve the hybrid circuit.

**Regarding claim 16**, Rahamim teaches a hybrid circuit 300 as shown in figure 3 associated with an end of a telecommunication line to which a transmitter and a receiver are connected, comprising:

a first circuit (i.e., Tx2) having a first terminal coupled to an output of the transmitter, a second terminal (i.e., Tx1) coupled to an input of the receiver and a third terminal coupled to the telecommunication line (i.e., transformer 330), for canceling signals transmitted by the transmitter from appearing at the receiver input so that the receiver is substantially isolated from the transmitter (col.4, lines 37-54; col.5, lines 26-32 and col.6, lines 4-30), the first circuit forming a voltage divider (i.e., voltage divider circuit) of reactive elements (i.e., a combination of  $R_r$  and a feedback resistor  $R_f$ ; col.5, lines 34-40) that is configured as a filter.

It should be noticed that Rahamim fails to clearly teach the feature of hybrid circuit for filtering signals received from the communications lines at frequencies that fall outside of a predetermined frequency range. However, Isaksson et al. ("Isaksson") teaches a Splitter/Hybrid coupled to subscriber twisted telecommunication line having low-pass (LP) filters for receiving and transmitting signals from and to the subscriber twisted telecommunication line such that the "LINE" as shown in figure 5 and 8, col.11, lines 11-43 for a purpose of eliminating undesired signals received from a telephone line.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of hybrid circuit with filtering feature for filtering signals received from the communications lines at frequencies fall outside of a predetermined frequency range such as voice frequencies range, as taught by Hiyoshi, into view of Rahamim in order to improve the hybrid circuit.

**Regarding claim 25**, as noted above, Rahamin teaches a hybrid circuit as discussed in rejection of claims 1 and 16 above. It should be noticed that Rahamim fails to clearly teach the feature of hybrid circuit for filtering signals received from the communications lines at frequencies that fall outside of a predetermined frequency range. However, Isaksson et al. ("Isaksson") teaches a Splitter/Hybrid coupled to subscriber twisted telecommunication line having low-pass (LP) filters for receiving and transmitting signals from and to the subscriber twisted telecommunication line such that the "LINE" as shown in figure 5 and 8, col.11, lines 11-43 for a purpose of eliminating undesired signals received from a telephone line.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of hybrid circuit with filtering feature for filtering signals received from the communications lines at frequencies fall outside of a predetermined frequency range such as voice frequencies range, as taught by Hiyoshi, into view of Rahamim in order to improve the hybrid circuit.

6. Claims 2-4 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rahamim (U.S. Pat. #: 5,541,990) in view of Isaksson et al. (U.S. Pat. #: 6,538,986) as

Art Unit: 2643

applied to claims 1 and 16 above, and further in view of Gilbert (U.S. Pat. #: 4,878,241 also cited in the previous Office Action).

**Regarding claims 2-3, 17 and 19**, Rahamim and Isaksson, in combination, fails to clear teach the hybrid comprising a first order filter or a high pass filter. However, Gilbert teaches such limitations in figure 2 for a purpose of filtering desired signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of hybrid circuit comprising the first order filter or a high pass filter, as taught by Gilbert, into view of Rahamim and Isaksson, in order to improve the hybrid circuit.

**Regarding claims 4 and 18**, Gilbert further teaches limitations of the claim in col.4, line 37 – col.5, line 27.

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rahamim (U.S. Pat. #: 5,541,990) in view of Isaksson et al. (U.S. Pat. #: 6,538,986) as applied to claim 16 above, and further in view of Hiyoshi (U.S. Pat. #: 5,734,703 also cited in the previous Office Action).

**Regarding claim 22**, Rahamim and Hiyoshi, in combination, fails to clear teach the hybrid comprising a second circuit configured as an inverting amplifier, the second circuit connected between the transmitter output and an input of the first circuit. However, Hiyoshi teaches limitations in figure 13 for a purpose of driving the transmission signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the second circuit connected between the

Art Unit: 2643

transmitter output and an input of the first circuit, as taught by Hiyoshi, into view of Rahamim and Isaksson, in order to drive transmission signals to and from the subscriber equipment.

8. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rahamim (U.S. Pat. #: 5,541,990) in view of Isaksson et al. (U.S. Pat. #: 6,538,986) as applied to claim 25 above, and further in view of Gilbert (U.S. Pat. #: 4,878,241).

**Regarding claim 27**, Rahamim and Isaksson, in combination, fails to clearly teach the first filter circuit is configured as a capacitive divider. However, Gilbert teaches limitations of the claim in col.4, line 37 – col.5, line 27 for a purpose of filtering the desired signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the first filter circuit being configured as a capacitive divider, as taught by Gilbert, into view of Rahamim and Isaksson, in order to improve the hybrid circuit.

**Regarding claims 28 and 31**, Gilbert further teaches limitations of the claims as shown in figure 2.

*Allowable Subject Matter*

9. Claims 32-61 are allowed.

10. Claims 5-15, 20-21, 23-24, 26 and 29-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



Art Unit: 2643

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh K. Tieu whose telephone number is (703) 305-3963 and E-mail address: BINH.TIEU@USPTO.GOV.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz, can be reached on (703) 305-4708 and **IF PAPER HAS BEEN MISSED FROM THIS OFFICIAL ACTION PACKAGE, PLEASE CALL Customer Service at (703) 306-0377 FOR THE SUBSTITUTIONS OR COPIES.**

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist, tel. No. 703-305-4700).



**BINH TIEU**  
**PRIMARY EXAMINER**  
Art Unit 2643

Date: October 18, 2004